

DA400 CMOS Distribution Amplifiers

Accepts input frequencies from 100Hz to 100 MHz

Key Features

- Low Phase Noise
- Exceptional Isolation
- Conveniently Daisy-Chained
- Miniature/Embeddable
- Broad Input Power Range
- Supports 50Ω/High Z Load

Applications

- Frequency Standard Distribution
- Test and Instrumentation
- Clock Distribution



Functional Description

The primary function of our DA400 distribution amplifier is to distribute an existing signal to multiple points while preserving its integrity. The DA400 is ideal for situations requiring a low noise RF signal to be supplied to multiple usage points.

The DA400 has one input channel and five output channels. It may be configured with either SMA or BNC connectors (details provided in the connector table on page 4). The input is AC-coupled and has a 50 Ω source impedance. This design provides a 1.8V CMOS output across a wide range of input power levels.

The single input is buffered and then fanned out to five output stages with Schmidt Trigger drivers. This configuration ensures high channel-to-channel isolation with fast transition times and low overshoot. This configuration achieves channel to channel phase offset of under 10 ns; the phase offset from the input to any output is less than 20 ns at 10 MHz.

For larger systems requiring more outputs, multiple amplifiers may be daisy-chained together by connecting the output of channel five to the input of another distribution amplifier. However, this configuration increases phase offset between amplifiers. If channel-to-channel phase offset is a concern, the recommended configuration would be to use a single amplifier to drive up to five additional amplifiers. This will provide up to 25 outputs with minimal channel-to-channel phase offset.

Standard Specifications:

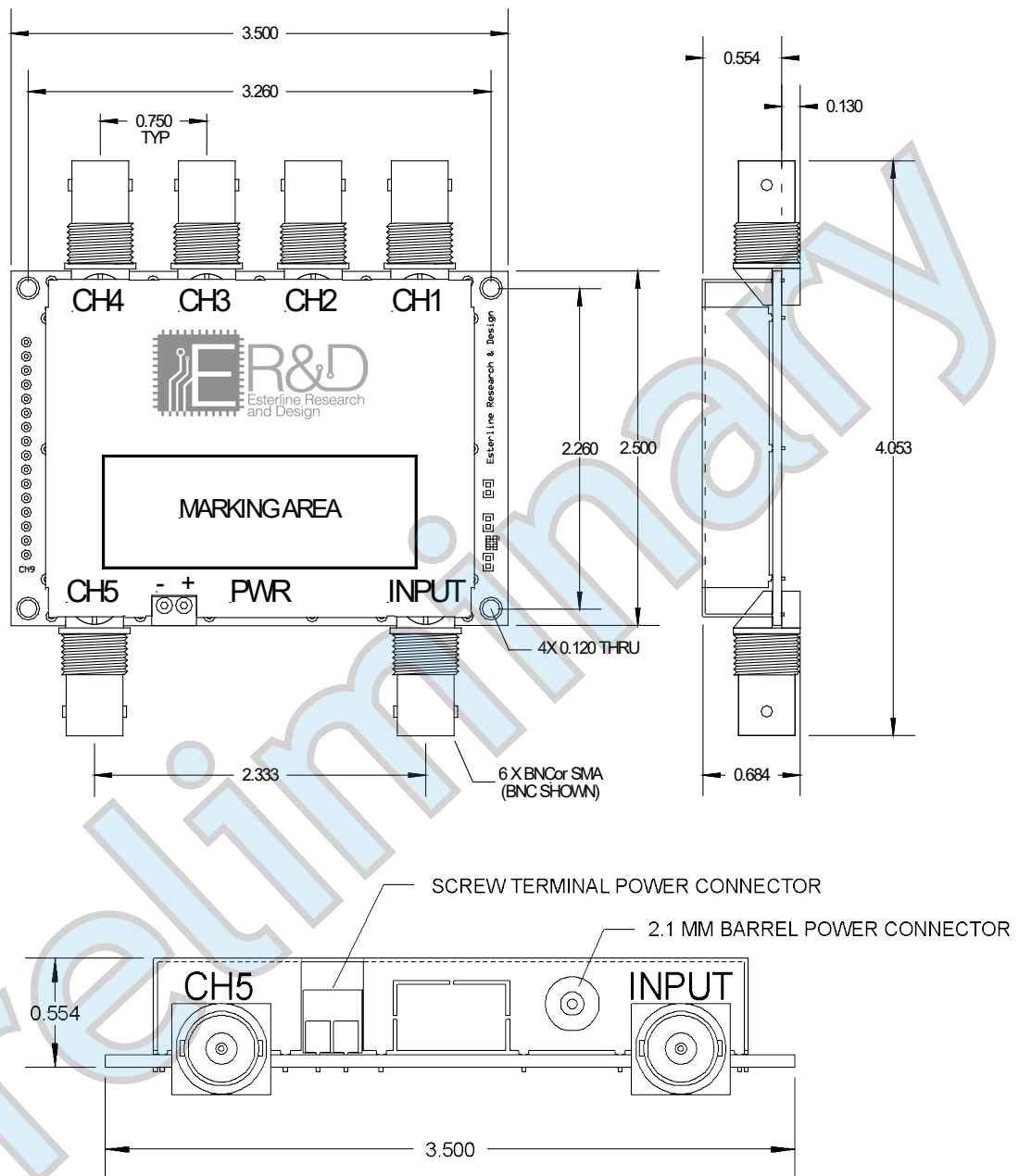
Parameter	Minimum	Maximum	Units
Input¹			
Frequency Range ²	0.0001	200	MHz
Amplitude ³	-10	+16	dBm
	0.2	4.0	Vpp
Impedance	45	55	Ω
Output			
AC Coupled			
Amplitude (50 Ω Load) ⁶	-0.45	0.45	V
Amplitude (High Z Load) ⁶	-0.9	0.9	V
DC Coupled			
Amplitude (50 Ω Load) ⁶	0	0.9	V
Amplitude (High Z Load) ⁶	0	1.8	V
Channel-to-channel Isolation	70	N/A	dB
Rise/Fall Time ³		3	ns
Power Requirements⁴			
Voltage	6	12	VDC
Current ⁵	N/A	250	mA

Notes:

1. Input signal waveform can be any type with a 50% duty cycle.
2. Amplifiers are purchased at a fixed frequency. Can accommodate any frequency between 1-200 MHz.
3. Min and max output characteristics specified is using a 10 MHz input.
4. The device may be powered with a user-supplied voltage via the screw terminal connections or a 2.1 mm plug on a 6 V, 500 mA power module (a suitable module can be supplied upon request). When the power module is utilized, the module voltage is made available on the screw terminals, allowing the user to access 6 V, 250 mA to power external circuitry.
5. Max current specified is using a 10 MHz input.
6. Values shown are nominal logic level low and high voltage levels.

Caution: Do not connect an external supply voltage to the screw terminals when using the power module.

Mechanical Specifications:



**All dimensions are in inches
with a tolerance of $\pm 0.020''$**

Ordering Information:

DA400-A-01

Connector Configuration

DASH #	Configuration
A	BNC
B	SMA1
C	SMA2
D	SMA3
E	SMA4

Output Signal Coupling

DASH #	Type
01	AC
02	DC

Connector Configurations

Part Number Code	Configuration
BNC	BNC on both sides
SMA1	Short SMAs on both sides
SMA2	Panel-mount SMAs on front, short SMAs on rear
SMA3	Panel-mount SMAs on rear, short SMAs on front
SMA4	Panel mount SMAs on both sides